

THE EVOLVING URBAN PLANNING The Case of The City of Yogyakarta

by
Hadi Sabari Yunus *

ABSTRACT

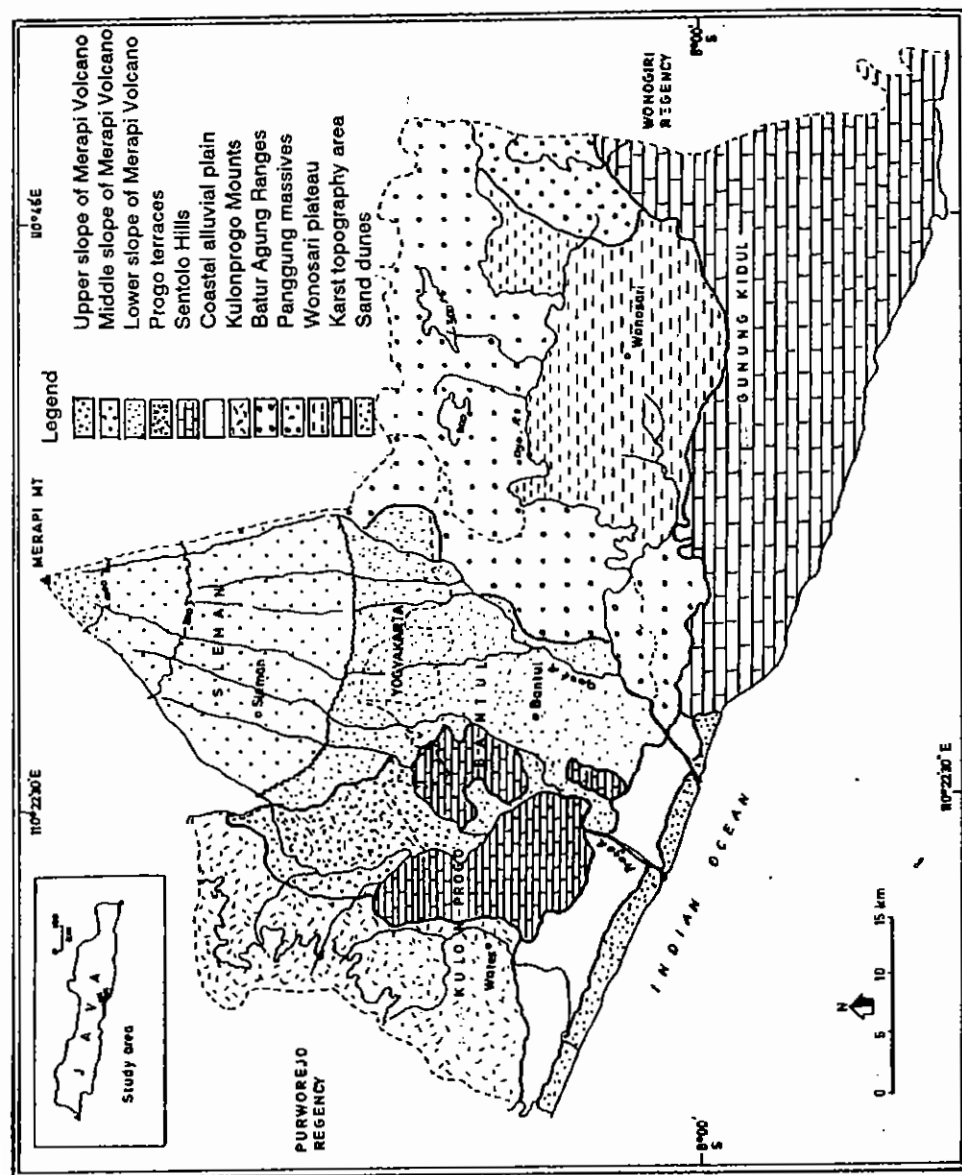
This article is to present the changing urban plans of the city of Yogyakarta and their impacts on its physical appearance. An intensive study of extensive materials is carried out in the library and governmental institutions particularly, the regional planning board of the city of Yogyakarta. By comparing the earlier simplest plan, to the recent one, a pronounced development of the respective plan can be detected. There were five types of Yogyakarta's plan i.e. Mangkubumi's Plan, Thomas Karsten's Plan, Putuhena's Plan, Purbo-diningrat's Plan and the present plan which will be reviewed here. Some conclusions are particularly directed toward the present plan because this one is not more than a synthesis of the previous plans and the inputs are expected in order to be used for further elaboration.

INTRODUCTION

The City of Yogyakarta is located at the southern part of Fluvio Volcanic Foot Plain of Merapi Volcano. It is surrounded by vast productive agricultural lands with good irrigation networks (McDonald & Associates, 1984). Its flat topography facilitates the mobility of people, improved and service to and from the city of Yogyakarta through good transportation networks (Fig 1).

This city posits it self as a political, economic, social and cultural center of the Special Province of Yogyakarta. As the capital of the province, this city functions as a nodal point of this region and its influence has a matter of fact overspilled the administrative boundaries of the province themselves. It is not surprising, the city of Yogyakarta has attracted people and functions from the surrounding hinterlands that are flowing into the urban area as centripetal

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movements. In reverse, centrifugal movements of people and functions are also taking place. This is the reason why the urban land of the city of Yogyakarta is expanding centrifugally into the surrounding urban fringe areas. Nevertheless, the characteristics of the expansion show various spatial distribution. In several parts of the city, the urban landscapes have overspilled the municipal boundaries and some of the others have not.

A rapid land use change is happening in the fringe areas, particularly at the areas that are located along the existing main transportation routes. A ribbon development of urban land use characterizes urban land extension along the routes, whereas in the interstitial areas are dominated by the so-called leap frog developments. This condition has concomitantly brought about some negative impacts on the land use development i.e. unorderly land use growth. Being aware of this problem, the authorities of the city of Yogyakarta have tried to manage and direct the land use growth by formulating city plans. As a matter of fact, there are many city plans have ever been adopted and many changes have also been made for mending the adopted plan. This article puts forward and reviews the plans since the time the city was established.

THE CITY PLANS THROUGH TIMES

Since its first establishment, the city of Yogyakarta has undergone many changes in its urban planning. These plans can be distinguished into five different city plans, viz. (1) Mangkubumi's Plan, (2) Thomas Karsten's Plan, (3) Putuhena's Plan, (4) Purbodiningrat's Plan and (5) Present Plan or A Synthesis (Pemda Tk II Yogyakarta, 1982).

Mangkubumi's Plan

The urban planning of the city of Yogyakarta was firstly introduced by Prince Mangkubumi in 1756. The stress of his planning was limited to the areas where the palace was located in the innersides of the fortress. In order to break the isolation of the hinterlands, the plan formulated some main transportation routes and they were related to the four main orientation i.e. north, east, south and west (Map 2).

The main route leading to Surakarta was upgraded. Since the functional relationship with Surakarta, an urban center that is located around 60 kilometers east of the city of Yogyakarta, established long before the city of Yogyakarta was formally erected. The fact showed that the existence of this road has attracted the establishments of various city functions in the areas near by. The existence of Mount Merapi in the north and the south sea in the southern part can not be separated from the myth of the palace of Yogyakarta. This is the reason why these two natural marks were used as the palace main orientation and its planning. The roads leading to Mount Merapi and Indian Ocean were

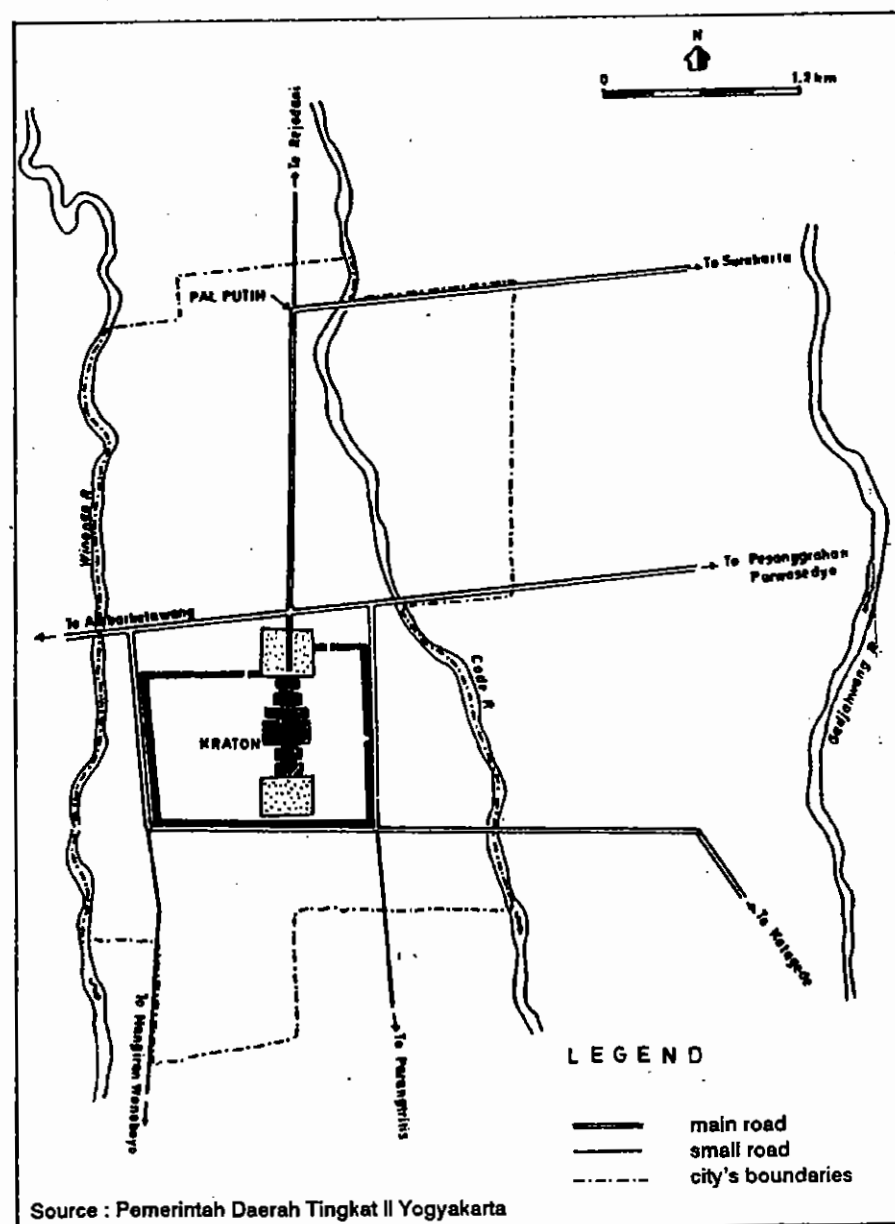


Figure 2. Kota Yogyakarta (1756)

planned. Since these two roads did not connect the city of Yogyakarta with broader settlement systems and other centers, factually, could not develop as fast as the roads leading to Magelang (North of Yogya), Bantul (South of Yogya) and Wates (West of Yogya) that were established later.

The areas that were located surrounding the palace were designed for the residence of the royal families whereas the outer zones (areas located outside the fortress) were partly used for the residence of the royal families and partly used as base positions of the royal soldiers. The trading was concentrated in the quarter called "pecinan" (a place for the chinese). Parallel with the course of its growth, the extension of settlements mostly followed the existing transportation routes. In this period the planning was particularly stressed on the opening of some transportation routes in the framework of breaking the isolation of its hinterlands. Until nowadays no complete information were available concerning the Prince Mangkubumi's Plan.

Thomas Karsten's Plan

This plan was proposed in 1936 by a Dutch scholar whose name was Thomas Karsten. In his plan, Thomas Karsten designed some economic establishments. Since Indonesia was still in the colonial period, the plan was designed, of course, in such a way for the benefit of the Dutch Government. The establishments of railway stations, trading "kantoor" office, shopping centers, "Walson" workshop servicing the sugar factories and their machineries that were located in the surrounding areas, are some of the examples. And of course, a detailed plan for exclusive residential areas in the northern fringe of the city. Since this area was particularly designed for the residence of Dutch officials, this new complex was planned in accordance with a European style. Big buildings, regular setting of houses, streets and boulevards were the characteristics of these new complexes. The residential area was then called "Kota baru" (New Town) (Fig 3).

Besides, some streets that were connecting one quarter to other quarter were also upgraded and established. His plan had a great impact on the basic principles of urban planning in the city of Yogyakarta and the outline of his plan can still be traced in the present structure of the city plan.

Putuhena's Plan

The third plan was made in 1947, two years after The Indonesian independence. The city of Yogyakarta was the capital of the new republic. The plan was proposed by Putuhena, the minister of Public Works at the period. The city of Yogyakarta was zoned into two sections, the northern and the southern sections. These two zones were split by railway connecting the city Yogyakarta and Surakarta (Fig 4).

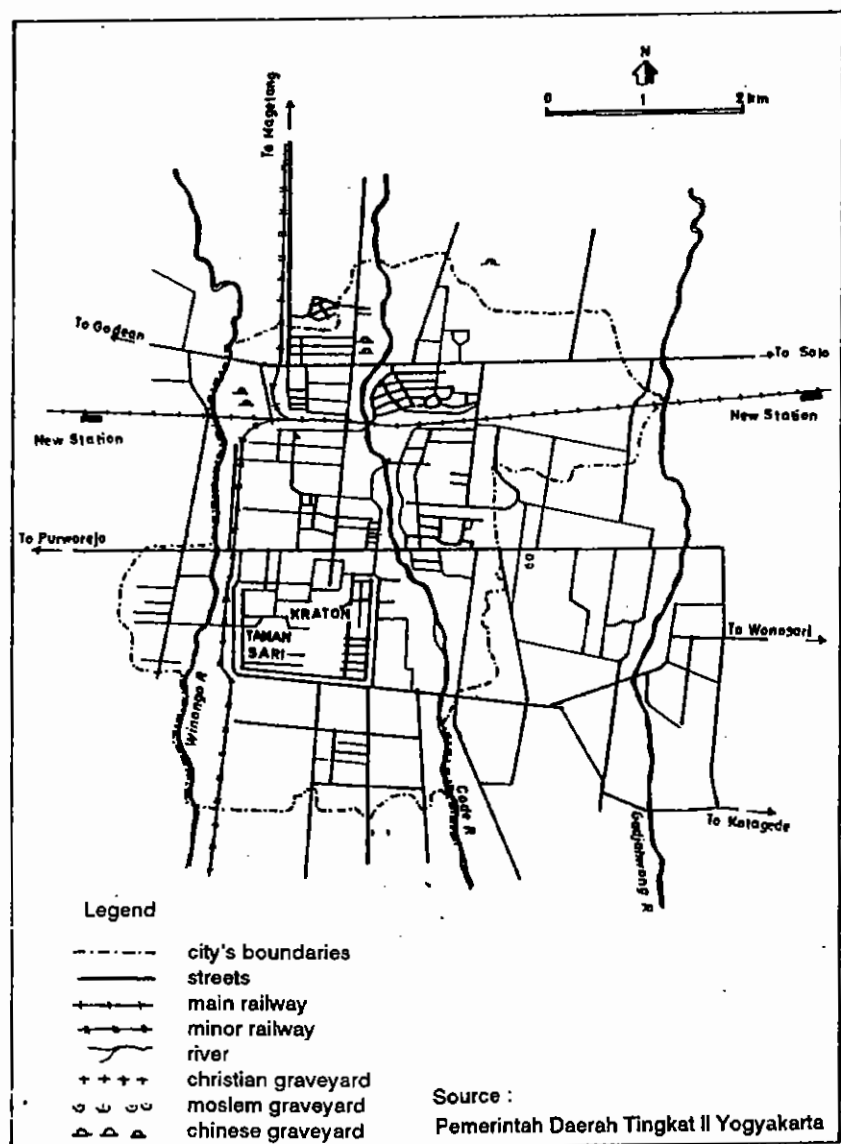


Figure 3. Thomas Karsten's Plan (1936)

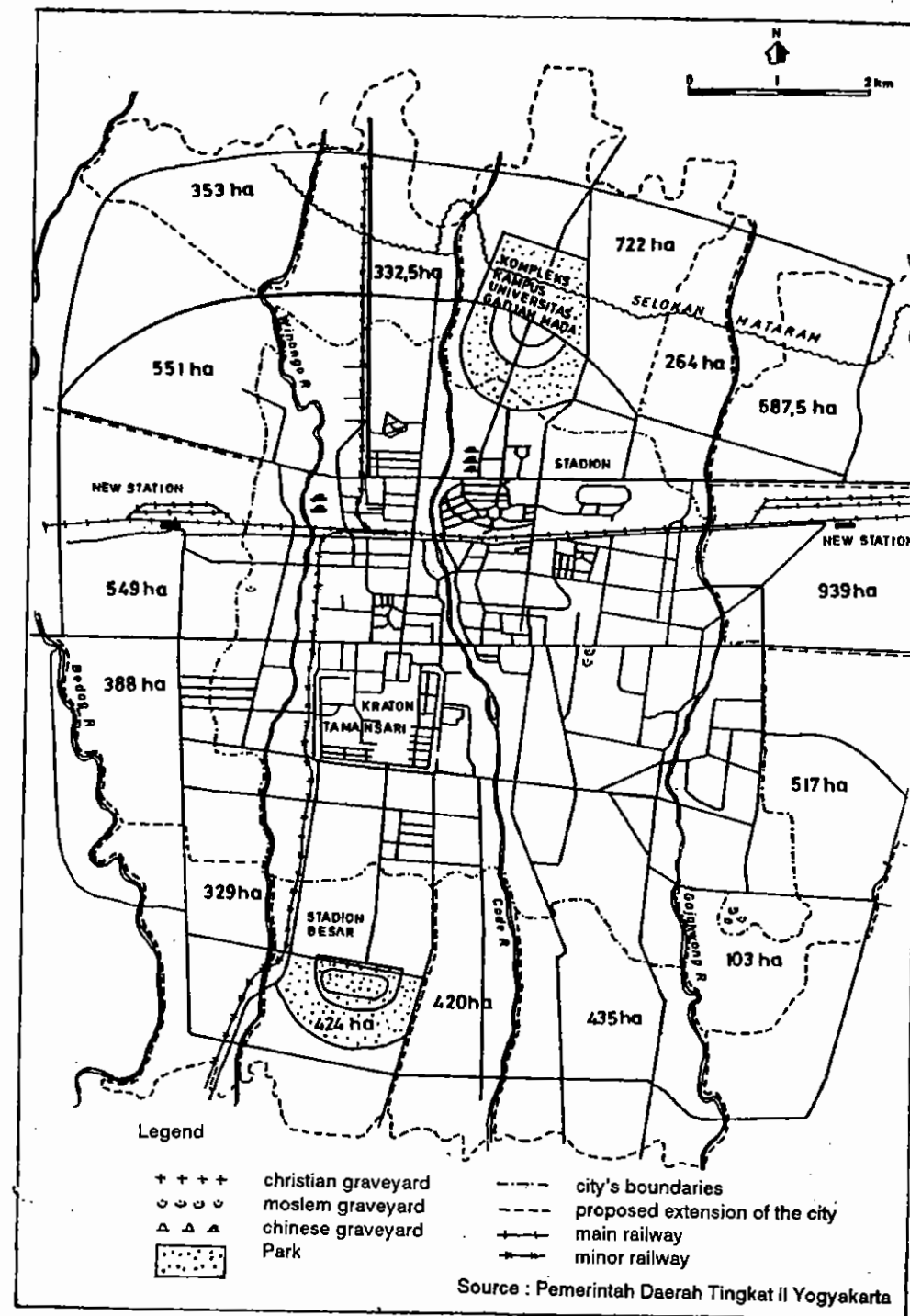


Figure 4. Putuhena's Plan (1947)

The main orientation of the southern zone was the Palace as a center of traditional life in terms of socio-cultural activities, and as a matter of fact, up to the present time, this brilliant idea still characterizes this zone and becomes one of this cultural attractions in this city. For the time being, the northern zone was planned to have a new climate in the form of non traditional orientation with Gadjah Mada University campus as its center. This complex was planned in the urban fringe areas of the city of Yogyakarta in that time and split into two parts by the road to the beautiful mountain resort of Kaliurang.

In this time, the proposed area has been established and developed very well and the impact on the growth of the city of Yogyakarta is very prominent. The pace of physical development of the city in the northern and north eastern parts is relatively faster as compared to other sections of the fringe areas. Some new educational centers begin to grow after then and their presence have accelerated the pace of physical development of the city in these sections. Besides, a brilliant thought vappereed in the plan concerned with the necessity of ring roads around the city of Yogyakarta although only after four decades later a part of ring roads can be realized, i.e. in 1986. This road was firstly designed to anticipate the future growth of traffic in the city and reducing the burden of the inner city streets and directing the intercity traffics for not passing through the city of Yogyakarta.

Another brilliant plan was the establishment of a great sport stadion. It was formerly proposed in the southern fringe of the city but it is now built in the eastern part of the city. As a matter of fact, Putuhena's Plan could not be implemented very smoothly because of the military actions in the framework of defending the independence of this new republic. Only in 1953, Putuhena's concepts were broken down into some details by new proposals.

Purbodiningrat's Plan

His plan was merely a revision of the previous plan and then manifested in the 5 year development plan of the city of Yogyakarta (1953-1958). Although the government of Indonesia had already the independence, but the political stability was not fully achieved. The government place political stabilization on the first priority so that the plan remained on the table, which means that it was not implemented fully. The striking renewal of the plan was concerned with northern fringe, particularly around Gadjah Mada University complex. It seemed that from the very beginning of its plan, the city of Yogyakarta was directed to be an educational city as its identity, especially a university city. Concomitantly, it is not surprising that the government pays a great attention on the development of university campuses in the city of Yogyakarta and from its earlier development the city Yogyakarta was known as a student city (Fig 5).

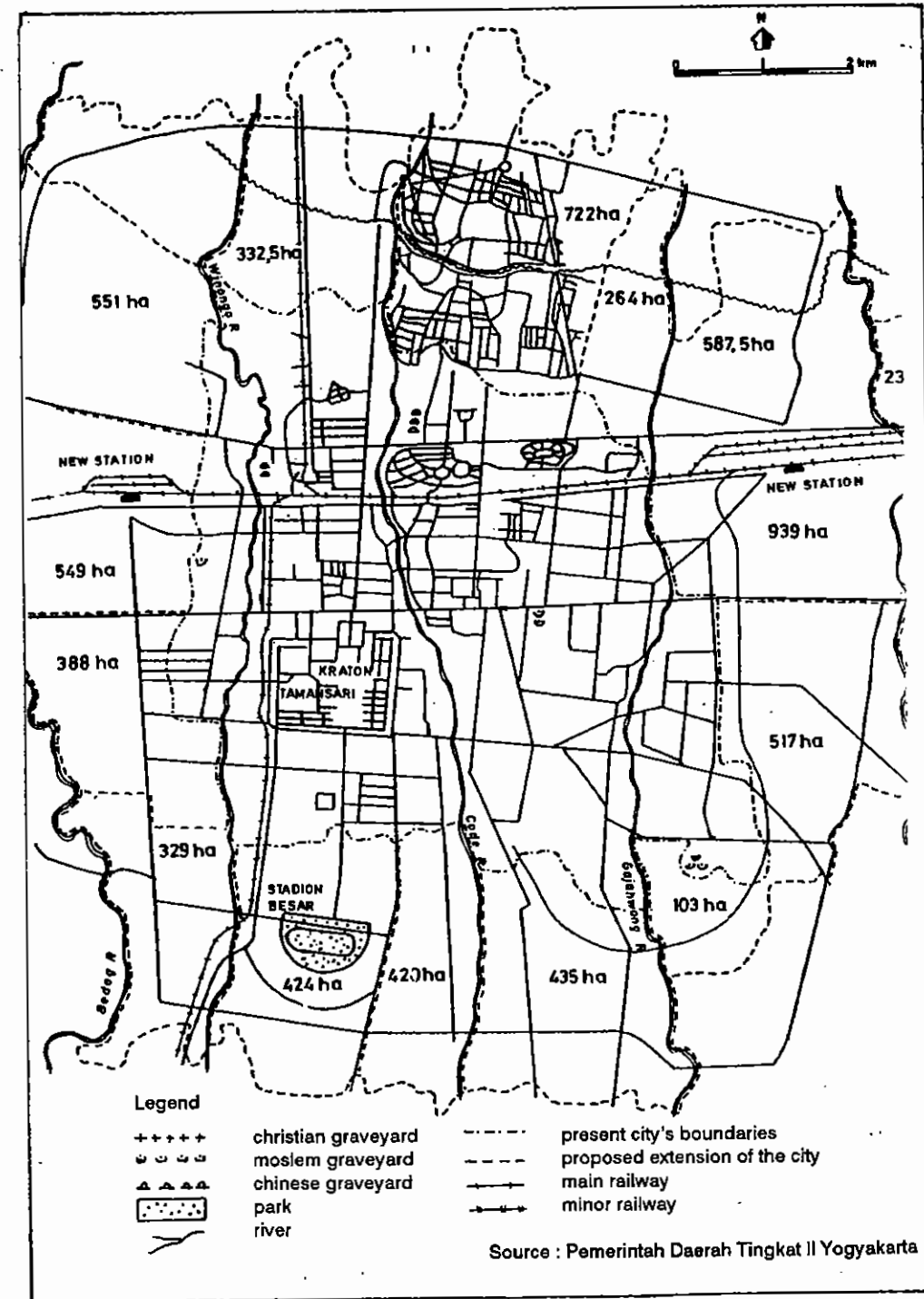


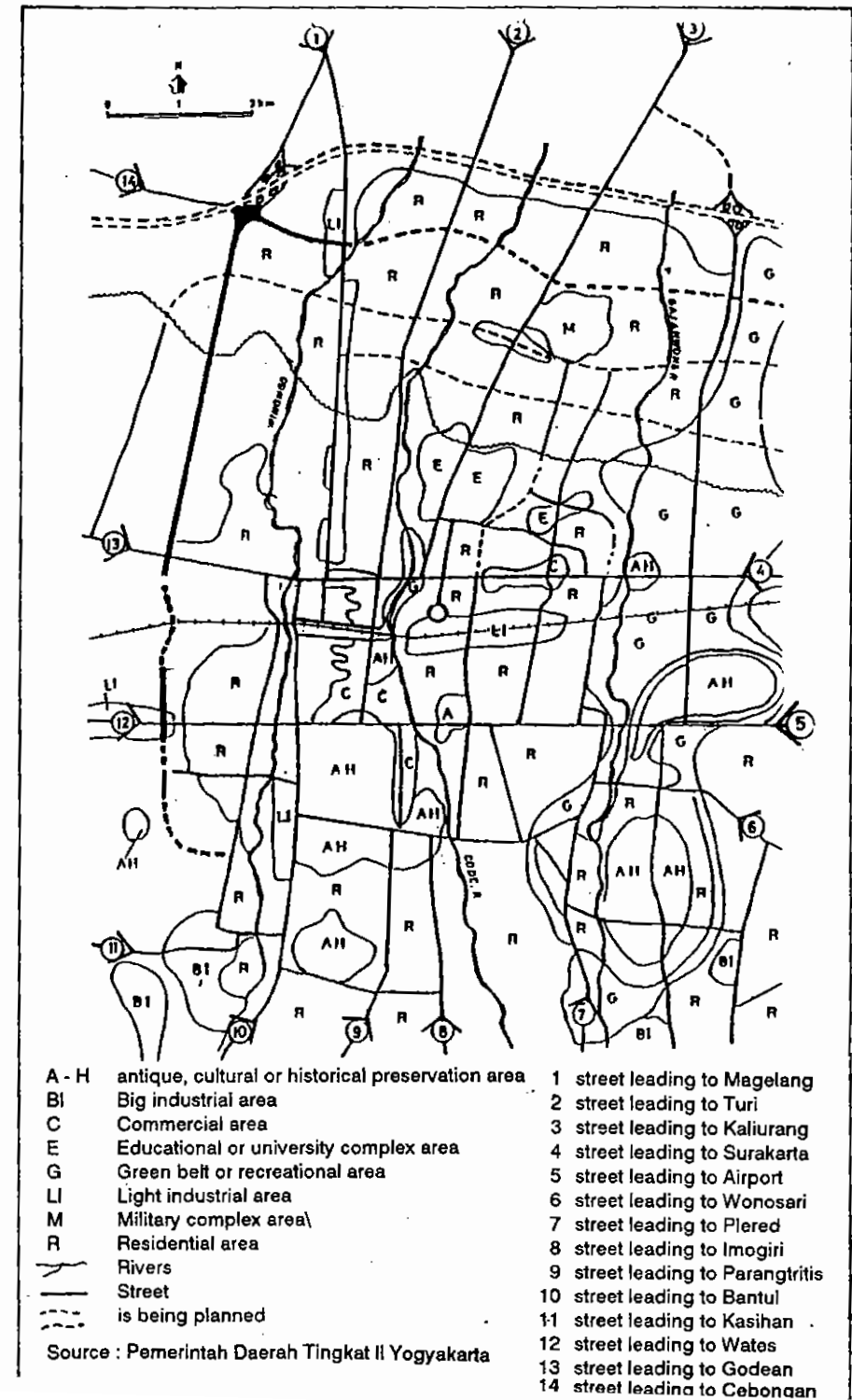
Figure 5. Purbodiningrat's Plan (1953)

The Present Plan / A Synthesis

Only about ten years later, the government gave a special attention on the already formulated city plan to develop the city of Yogyakarta. In its endeavours, the government invited some faculties in the Gadjah Mada University to be its counterparts for reviewing the previous plan. Only on the 26 July 1971, the team was able to propose some new revisions. Four important requirements points should be used as guidelines for future growth of the city of Yogyakarta, they are (1) the northern extension of the city of Yogyakarta had to be limited between Magelang Street in the west and Gadjahwong river in the east, (2) the western parts of the city of Yogyakarta should be preserved as agricultural lands and urbanization was only allowed along the main roads leading to Wates and Godean, (3) the southern parts of the city had also to be protected from the encroachment of urban uses because the condition of this area is very productive in nature like the western portion. In this case the government realized the importance of these areas on the local economy and the regional interests as well in terms of its food productions. The urbanization was only permitted along the main roads leading to Bantul, Parangtritis and Imogiri, (4) since the city of Yogyakarta has been under bounded, the administrative boundaries should be reformulated. But up to now, the approval of Minister of Internal Affairs about the proposed new boundaries has not been issued. Nevertheless, this 1971 plan was used as a masterplan for the development of the city of Yogyakarta up to the year of 1985 (Fig 6)

After the year of 1985, the previous plan was elaborated and some changes were executed. The plan was designed as a guide line for managing the growth of urban land use for twenty years to come i.e. up to the year of 2005. In this period, the city government concentrates its attention merely within the administrative territory whereas the areas that are located beyond the city borders are being planned by both the city government and the regencies where the areas belong to. In general, the 1985 plan does not show essential changes. Since 1985 plan only covers smaller territory as compared to the 1971 plan, some details within the administrative boundaries of the city of Yogyakarta can be depicted on map (Fig 7). In the 1971 plan, industries were distinguished into light and big industries. Light industries were particularly located along Magelang Street, Bantul Street, a strip south of Lempuyangan railway station and along Wates Streets, about 4 kilometers west of the city.

Big industries were located at the south western and south eastern parts of the city. In the 1985 plan, there is no specification of the differentiation in industries. Industrial areas are designed at the eastern parts of the city covering an area of about 40 hectares (Fig 7). There were no any clear information about this case, whether the area is designed to locate big industries, light industries or



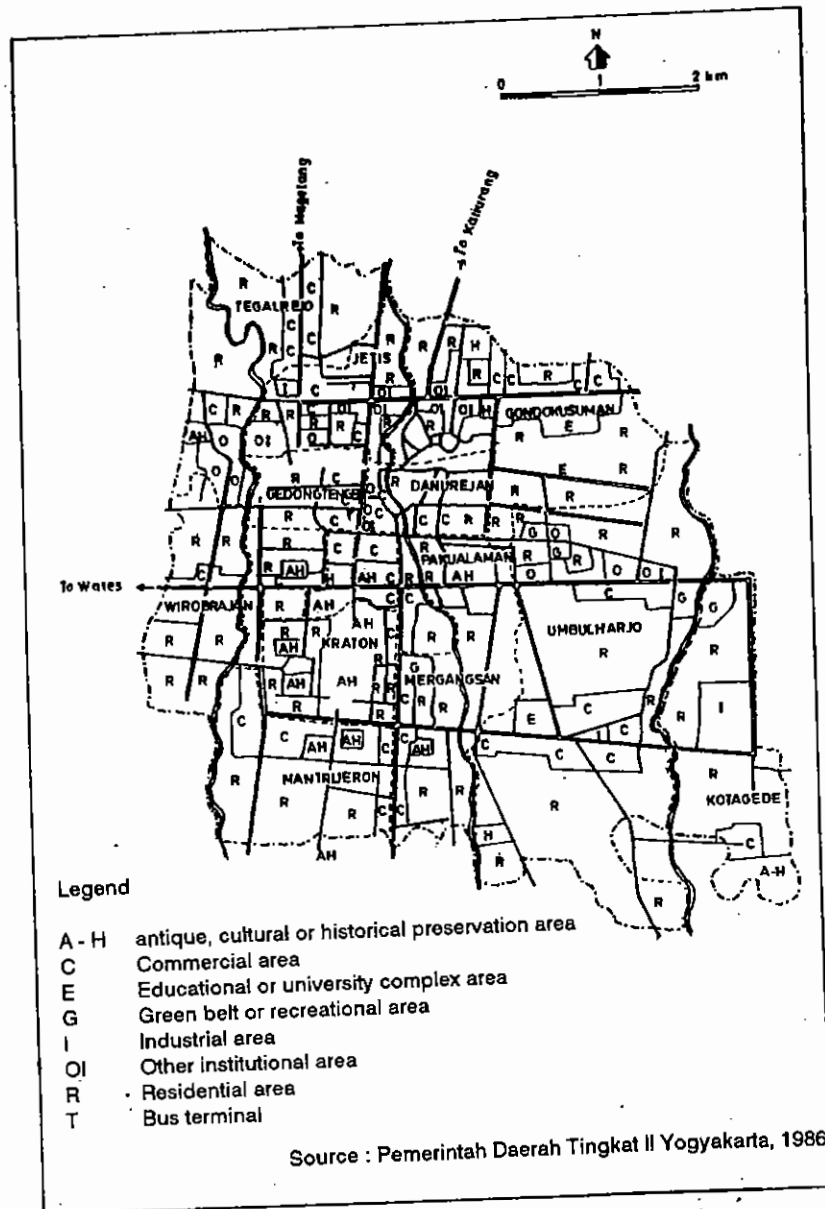


Figure 7. Master Plan of the City of Yogyakarta 1985 - 2005

both. Since the characteristics of big industries are quite different from the light ones, grouping them into just one complex is not a wise policy.

Residential area occupied the largest land use in the city and it is mostly has the same pattern as depicted in the 1971 plan. The second greatest use is for commercial area and in the 1985 plan this area is much clearer and larger as compared to the 1971 plan. In the 1971 plan, commercial area is limited to Malioboro shopping district, Solo street and Katamso street but in the 1985 plan, commercial area is broadened and covers all parts of the city. In the northern parts of the city, for example, commercial areas is designed along Magelang street, Diponegoro street and Solo street. Malioboro shopping district represents commercial areas in the central part of the city. In the western sections of the city, along Godean and Wates street are found commercial areas. The southern parts of the city have commercial area along Bantul, Parangtritis street, and in the areas around the present bus terminal emerge a shopping district in the eastern parts of the city.

The third largest land use is for cultural or historical preservation area. Kraton (palace) complex, Water castle complex, Vredenburg Fortress complex and Kotagede complex are the main location. The pattern in 1985 plan is the same with the 1971 plan. Green belts in the 1985 plan are particularly designed along existing rivers, i.e. Winongo river, Code river and Gadjahwong river. Since in this time most of these areas have been inhabited, the realization of the plan will bring a lot of social and economic problems.

CONCLUDING REMARKS

A city plan is not more than a concept used for directing, managing and controlling urban land growth in order to create an idealized urban plans of the city of Yogyakarta set forth above, have in fact their impacts on physical development of the city of Yogyakarta. The four principle that have been used as guiding lights for future development of urban land extension are environmentally oriented thought, but considering the present changes, the implementation of these principles will be rather difficult. The main constraint is the establishment of ring-road encircling the city of Yogyakarta. The existence of the roads makes the accessibility of the surrounding fringe areas will be enhanced and concomitantly it attracts more people and fuctions to settle near by.

Since the ring road is passing through the productive agricultural lands, especially, in the western, southern and eastern parts of the fringe areas, the conversion of agricultural lands into non agricultural uses will be accelerated in a few years later. Without any concrete action programs, like zoning policies for protecting and preserving agricultural lands (Furuseth, O.J., 1982), the implementation of the second and the third guideline can not be realized.

A city plan should not only focuss on areas within its administrative boundaries, because urban lands are always expanding parallel with the growth of its population and activities. In order to anticipate the future pace of development, an inter governmental coordination is promptly expected, viz. the city government itself and the regencies that are located next to the municipal boundaries. Slowly but sure, the existing urban land will overspill the administrative city boundaries. An extra-territorial zoning policies (Isberg, 1975) can be adopted in order to cope with this problem.

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MONITORING MANGROVE DISAPPEARANCE BY REMOTE SENSING

A case study in Surabaya, East Java-Indonesia

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ABSTRACT

This study deals with the application of remote sensing in monitoring mangrove disappearance. Color aerial photograph scaled to 1:30.000 of 1981, numerical data of Landsat satellite taken in 1985 and SPOT satellite data of August 30, 1988 were used. The photograph was interpreted manually, while the digital analysis with DIDACTIM software was applied to the Landsat and SPOT data. Barycentric supervised classification procedure was used in clasifying mangrove and land use classes. Key interpretation of mangrove type was obtained by field check in 1989.

Two types of mangrove (Avicennia sp and mixed mangrove) could be identified both on the aerial photograph and on the SPOT data. The extent of mangrove in 1981 was measured manually, while those in 1985 and 1988 were obtained by multiplying the number of pixel (picture element) and the spatial resolution of Landsat and SPOT respectively. During seven years (1981-1988), there were 852 hectares of mangrove in the study area which have been cut.

For mangrove reforestation purposes, two mangrove zonations are presented; one is based on the salinity gradient, while the other is based on the Ciloto formula. It seems that the second zonation is quite good for the study area.

INTRODUCTION

In many parts of the world, destrutions of mangrove, an halophyte formation, have been increasingly more and more serious. This type of forest

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